U.S. HOUSE OF REPRESENTATIVES

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June 21, 2002

The Honorable Sean O'Keefe
Administrator
National Aeronautics and Space Administration
Washington, D.C. 20546

Dear Administrator O'Keefe:

I have received the June 13, 2002 letter from Mr. Charles Horner, III of NASA's Office of Legislative Affairs regarding your intention to pursue an *"orderly shutdown"* of the X-38/Crew Return Vehicle (CRV) program. As you know, I have been concerned about the failure to date to commit to a restoration of the crew size needed to make the International Space Station (ISS) a productive facility consistent with our longstanding international commitments on this program. This latest notification does nothing to allay those concerns.

The letter states that *"NASA has determined that pursuit of a multipurpose vehicle, which could include both crew transport and crew return capabilities is a more optimal use of NASA's resources than pursuit of a single-purpose vehicle, such as the X-38 Project."* Congress will need answers to a number of important questions in order to assess the credibility and wisdom of NASA's proposed approach.

I would therefore request answers to the following questions related to your decision to terminate the X-38 program in order to pursue a *"multipurpose vehicle"*:

Crew Transfer Vehicle (CTV) Alternative

1. Previous testimony to Congress and briefings to this Committee have indicated that a Crew Transfer Vehicle (CTV) would not be available under the planned Space Launch Initiative (SLI) schedule until 2011. Do you still stand by that timetable?
2. If you believe that development of a CTV could be accelerated, what date for the availability of a flight-tested, operational CTV do you consider to be realistic? What is the analytical basis for the changed availability estimate, and what changes to SLI would have to be made to realize an earlier CTV availability date?

3. If a CTV were developed on an accelerated schedule, when would the Space Shuttle be phased out as the means of supporting the ISS? If the intention is to maintain Shuttle support of the ISS after the CTV becomes available, what additional crewed access-to-space requirements has NASA identified to justify the additional capability that would be provided by the CTV during that time period?
4. How would the CTV be launched? When realistically would such a launch capability be available to support CTV launch operations? What would have to be done to human-rate such a launch capability? What is the analytical basis for concluding that such an approach would be feasible and cost-effective?
5. What is the estimated cost to develop a CTV? What would be the per-vehicle cost? What is the basis for that cost estimate, and has it been independently validated? Does it include the cost of human-rating a launch vehicle for the CTV?
6. The Department of Defense has not indicated any requirement for a crewed reusable launch vehicle (RLV) capability. What would be the relative priority of a CTV development in a joint NASA-DOD RLV program?
7. How many CTV vehicles would be needed to support ISS operations, and what would be the on-orbit stay-time of each CTV?
8. It is reasonable to assume that a CTV would of necessity be more complex than a CRV given its "multipurpose" capabilities. Has NASA completed an analysis of the maintainability requirements and operations costs of keeping a CTV rather than a CRV on orbit at the Space Station? If so, what are the results of that analysis?
9. The European Space Agency and the German Aerospace Agency participated in the X-38/CRV program until NASA's unilateral decision to terminate the activity. What would be the participation, if any, of those organizations in a CTV development program? On what do you base that conclusion?

Use of the Soyuz Crew Return Capability

1. There have been conflicting claims, ranging from 2004 to 2006, on when the Russian obligation to provide sufficient Soyuz crew return vehicles to support a 3-person crew on the ISS would end. Do you have a written agreement with the Russians that clearly states the date at which the Russian Soyuz commitment ends? If so, what is that date? Do the Russians agree with your interpretation of the commitment? If not, when do you expect to formalize such an agreement?
2. Based on NASA's past SLI briefings to the Committee, NASA would have to seek the use of Russian Soyuz vehicles to meet its crew return commitments for a period of at least 5 years prior to the availability of a U.S. CTV.

a. Given the restrictions contained in P.L. 106-178 [Iran Nonproliferation Act of 2000], how specifically do you intend to obtain the use of the Russian Soyuz vehicles?
b. According to NASA, the last formal price for a Soyuz vehicle was about $65 million. Based on two Soyuz per year to support a 3-person crew, the cost over 5 years would be about $650 million, and the cost to support a 6-person crew over that time period would be about $1.3 billion. Have those costs been included in the Space Station cost estimates that you are preparing in response to the IMCE recommendations?
c. In the absence of a credible U.S. CRV alternative over that time period, how do you intend to enforce price discipline in the acquisition of the Soyuz crew return capability?
d. In light of the reduction in the number of Progress resupply vehicles being provided by Russia relative to its earlier commitment, what assurance do you have that Russia will be able to continue to supply sufficient Soyuz vehicles prior to the availability of a U.S. CTV?

3. Is there any way that a Soyuz-based crew-return capability could support a 7-person crew on the ISS?

Cost-Benefit Analysis

1. Was a quantitative analysis of the costs and benefits of the alternatives completed prior to the decision to terminate the X-38/CRV program? If so, when was it done? Was it independently validated? Please provide the analysis to the Committee.
2. Did the analysis address the cost and schedule factors identified in the above questions?

You have stated that no final decision has yet been made on whether the U.S. will move beyond the limited "Core Complete" configuration and restore the originally planned 7-person crew for the ISS. Given your position and pending comprehensive and credible answers to the questions raised in this letter, I believe that it would be both premature and wasteful to terminate the X-38/CRV program at this time. A far better course for NASA would be to take the steps necessary to ensure an operational Crew Return Vehicle in December 2005 as previously planned.

I look forward to receiving answers to these questions by July 12, 2002.

Sincerely,

Ralph M. Hall

RALPH M. HALL
Ranking Democratic Member